REMARKS

A substitute Abstract on a separate sheet is submitted herewith.

Claim 2 stands rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The examiner has asserted that the subject matter of claim 2 is "essential" to applicant's invention. Applicant respectfully disagrees with the examiners assertion, as the method of replacing B-type pictures with null B-type pictures is conventional, as cited in the background of the specification (page 1, lines 17-18). Applicant has amended the specification to remove the reference to Stevens et al. Applicant therefore traverses the 35 U.S.C. 112, first paragraph, rejection of claim 2.

Applicant respectfully disagrees with the examiner's definition(s) of "B-type" pictures. The examiner has separately defined a "B-type" picture to be both "null information" (Office Action dated 10/02/03, page 5, line 4) and "I-pictures and P-Pictures of an MPEG frame" (Office Action dated 10/02/03, page 4, line 14), however neither definition is correct. Bi-directional, or B-type, pictures are encoded pictures that use both future and past pictures as a reference. B-type pictures are clearly and specifically defined by the MPEG standard and well understood by anyone skilled in the art.

Claim 1 stands rejected under 35 U.S.C 103(a) as being unpatentable over Balakrishnan. The examiner has asserted that it would have been obvious to one skilled in the art to place a smoothing buffer prior to decoding in a multiple program MPEG encoding/transmission/decoding process. Applicant notes that the test is not what would have been obvious to one skilled in the art but what would have been obvious to a person having ordinary skill in the art.

As it applies to the present invention, applicant defines a multiple program MPEG encoding/transmission/decoding process as having at least the following generic steps in the following

order: (1) a video sequence is encoded by a standard MPEG encoder creating a first Single Program Transport Stream (SPTS), (2) the first SPTS is multiplexed with other SPTSs forming a Multiple Program Transport Stream (MPTS), (3) the MPTS is transmitted to a destination, (4) a demultiplexer separates the first SPTS from the MPTS, (5) the first SPTS is transmitted to a decoder, and (6) the first SPTS is decoded by the decoder thus re-creating the original video sequence.

The examiner has stated that the smoothing buffer of claim 1 could be interpreted to be either the encoder buffer 20 or the decoder buffer 22 as disclosed by Balakrishnan (while the examiner cited Fig. 3, applicant observes that the same encoder buffer 20 and decoder buffer 22 are also shown in Fig. 1 and Fig. 2). Regarding the encoder buffer 20, applicant believes that the limitations of claim 1 sufficiently distinguish the smoothing buffer of claim 1 from the encoder buffer 20 of Balakrishnan. Specifically claim 1 reads that the step of "separating a variable bit rate single program transport stream from the statistically multiplexed MPEG transport stream" must take place before the subsequent step of "loading a picture ... from the variable bit rate single program transport stream into a smoothing buffer." Thus the smoothing buffer of claim 1 must be downstream of a demultiplexer, and thus inherently downstream of a multiplexer. Balakrishnan states, referring to Fig. 1, "Encoder buffer 20 becomes the source of data stream $S_1$. A multiplexer 24 multiplexes a plurality of source data streams" (col 2, lines 25-26). Clearly Balakrishnan does not disclose or suggest that the encoder buffer 20 should be placed after the multiplexer 24 as is called for by claim 1. This distinction is similar to the examiner's assertion that Stevens et al. teaches away from the present invention because the re-adjustment of bit rates occurs before multiplexing in Stevens et al and after multiplexing in the present invention (Office Action dated 10/02/2003, page 3, lines 10-13).

Regarding the decoder buffer 22 of Balakrishnan, applicant believes that the decoder buffer shown in FIG. 3 (and prior art FIGs. 1 and 2) refers to the decoder buffer that is required by the MPEG standard to be present in an MPEG compliant decoder (col 9, line 13). Specifically, the MPEG2 standard requires a decoder to have a 1.8 MB buffer at the input of the decoder. Since the smoothing buffer of claim 1 outputs pictures from the smoothing buffer to an MPEG decoder, the smoothing buffer itself cannot be inside the MPEG decoder and would be an additional component to the MPEG transmission system as shown in Balakrishnan FIG. 3. Further, Balakrishnan does not disclose the addition of a buffer after demultiplexing the MPTS to reduce the likelihood of a decoder buffer overflow or underflow. Rather Balakrishnan discloses manipulating the logical size of the encoder buffer 20 to prevent the decoder buffer from overflowing or under flowing (col 9, lines 20-37).

Claim 1 is not concerned with the placement of the smoothing buffer with respect to the decoder. Claim 1 is concerned with the transferring of a picture from the smoothing buffer prior to the picture's decode time stamp (DTS) as shown in FIG. 3 of the specification. By transferring pictures from the smoothing buffer commencing at a specified time prior to the picture's DTS, the possibility of decoder buffer overflow is greatly reduced and therefore the quality of the decoded video is enhanced.

For the foregoing reasons applicant submits that Balakrishnan does not disclose or suggest a method for demultiplexing a statistically multiplexed MPEG transport stream into a constant bit rate single program transport stream as defined in claim 1. Particularly, Balakrishnan does not disclose or suggest a smoothing buffer, being located downstream of the MPTS demultiplexer and does not disclose or suggest the timing limitations discussed in the preceding paragraph. Therefore independent claim 1 is patentable over Balakrishnan. It follows that dependent claims 2 and 3 are also patentable.

The preceding arguments relating to the patentability of claim 1 also apply to new independent claim 4. Therefore, applicant submits that claim 4 is also patentable.

Respectfully submitted,

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